AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) The wireless packet communication method according to claim 4 or claim 11, ~~A wireless packet communication method for transmitting a data packet in a special format and a data packet in a standard format between STAs, the data packet in a special format being generated by connecting or patching a plurality of data frames, the data packet in a standard format being generated from one data frame,~~ characterized by comprising:

transmitting a request packet from an STA supporting the special format before transmitting the data packet, the request packet being receivable only by an STA supporting the special format;

managing, by an STA having received said request packet and supporting the special format, a transmit-side STA of said request packet as one supporting the special format, and transmitting therefrom to the transmit-side STA a reply packet which is receivable only by the STA supporting the special format;

managing the transmit-side STA of said reply packet as one supporting the special format, by the STA having received said request packet and supporting the special format; and

transmitting, according to management information in an own station, the data packet in the special format when a receive-side STA supports the special format, and

transmitting the data packet in a ~~the~~ standard format generated from one data frame when the receive-side STA does not support the special format.

2. (Original) The wireless packet communication method according to claim 1, characterized by further comprising:

setting, by the STA transmitting a data packet, format identification information in a control information field of a data packet to be transmitted, the format identification information at least indicating a distinction between the standard format and special format; and

selecting, by the STA having received the data packet, the standard format or special format according to contents of said format identification information included in the control information field in the received data packet, and subjecting the data packet to reception processing according to a definition of the selected format.

3. (Original) The wireless packet communication method according to claim 1, characterized by further comprising

identifying, by the STA having received the data packet, the transmit-side STA from a control information field in the received data packet, recognizing, according to the management information in the own station, a format which the transmit-side STA supports, and subjecting the data packet to reception processing according to a definition of the recognized format.

4. (Currently Amended) A wireless packet communication method for generating a plurality of data packets in a special format in which a plurality of data frames are patched, and transmitting the data packets simultaneously between stations ("STAs"), characterized by comprising:

adding, to each of said plurality of data frames, a subheader including a field indicating a data size, a field indicating an order of a frame, and a field indicating presence/absence of a subsequent frame;

generating one data block by connecting the data frames having the subheaders added thereto, and generating a number of data blocks by dividing the one data block so that the data blocks have a uniform packet time length, the number of data blocks corresponding to a number of simultaneous transmissions; and

adding a main header to each of the number of data blocks corresponding to the number of simultaneous transmissions, and adding a control information field of the data packet before each of the data blocks having the main header added thereto and adding a frame check field of the data packet thereafter, to generate the data packets, the main header including information necessary to restore the patched data frames.

5. (Original) The wireless packet communication method according to claim 4, characterized in that

said main header includes: a class field indicating a structure of the main header according to numbers of data frames and fragments in the data packet; a frame number field indicating a number of frames in the data packet; a first frame starting position field indicating a frame starting position in the data packet in unit of byte; and a fragment field

indicating presence/absence of a fragment as a divided data frame and a position thereof.

6. (Original) The wireless packet communication method according to claim 4, characterized in that

said main header includes: a class field indicating a structure of the main header according to numbers of data frames and fragments in the data packet; and a first frame starting position field indicating a frame starting position in the data packet in unit of byte.

7. (Original) The wireless packet communication method according to claim 5 or claim 6, characterized in that

said main header is formed without the field(s) except for the class field when the numbers of data frames and fragments in the data packet are one.

8. (Original) The wireless packet communication method according to claim 5, characterized by further comprising:

checking the structure of the main header according to a value of the class field of the main header in each data packet received;

recognizing a starting position of the subheader of the data frame according a value of the first frame starting position field of the main header in the data packet, and cutting out a corresponding data frame from a data size of the subheader;

according to values of the frame number field and the fragment field of the main header in the data packet, cutting out a corresponding data frame from the data size of the subheader when a data frame follows, and performing connecting processing with a fragment at a head of a subsequent data packet when a fragment follows; and

restoring the plurality of data frames included in each data packet received.

9. (Original) The wireless packet communication method according to claim 6, characterized by further comprising:

checking the structure of the main header according to a value of the class field of the main header in each data packet received;

recognizing a starting position of the subheader of the data frame according a value of the first frame starting position field of the main header in the data packet, and cutting out a corresponding data frame from a data size of the subheader;

comparing the data size of the subheader following the cut-out data frame with a size of a portion subsequent to the subheader to distinguish whether it is a data frame or a fragment as a divided data frame, cutting out a corresponding data frame from the data size of the subheader when a data frame follows, and performing connecting processing with a fragment at a head of a subsequent data packet when a fragment follows; and

restoring the plurality of data frames included in each data packet received.

10. (Original) The wireless packet communication method according to claim 7, characterized by further comprising:

checking the structure of the main header according to a value of the class field of the main header in each data packet received;

comparing the data size of the subheader with a size of a portion subsequent to the subheader to distinguish whether it is a data frame or a fragment as a divided data frame, when the numbers of data frames and fragments are one according to the structure of said class field, cutting out a corresponding data frame from the data size of the subheader when a data frame follows, and performing connecting processing with a fragment at a head of a subsequent data packet when a fragment follows; and

restoring the data frame included in the received data packet.

11. (Currently Amended) A wireless packet communication method for generating one or a plurality of data packet(s) in a special format in which a plurality of data frames are aggregated, and for transmitting the data packet(s) between stations ("STAs"), characterized by comprising:

adding subheaders to the data frames, the subheaders each including a field indicating a data size, a field indicating an order of a frame, and a field indicating presence/absence of a subsequent frame;

generating a data block by aggregating the data frames having the subheaders added thereto; and

adding a main header to the data block, and adding a control information field of the data packet before the data block having the main header added thereto and adding a frame check field of the data packet thereafter, to generate the data packet, the main header including information necessary to restore the aggregated data frames.

12. (Original) The wireless packet communication method according to claim 11, characterized in that

said main header includes a class field indicating a structure of the main header according to a number of data frames in the data packet, and a frame number field indicating a number of frames in the data packet.

13. (Original) The wireless packet communication method according to claim 12, characterized by further comprising

forming the main header without the fields except for said class field when the number of data frames in the data packet is one.

14. (Original) The wireless packet communication method according to claim 12, characterized by further comprising:

checking the structure of the class field according to a value of the class field of the main header in each data packet received;

cutting out, for each of the data packets, corresponding data frames sequentially from data sizes of subheaders of the data frames according to a value of the frame number field of the main header; and

restoring the data frames included in the received data packet.

15. (Original) The wireless packet communication method according to claim 13, characterized by further comprising:

checking the structure of the class field according to a value of the class field of the main header in each data packet received;

cutting out, for each of the data packets, corresponding data frames sequentially from the data size of the subheader of the data frame; and

restoring the data frame included in the received data packet.

16. (Currently Amended) The wireless packet communication apparatus according to claim 19 or claim 26, ~~A wireless packet communication apparatus for transmitting a data packet in a special format and a data packet in a standard format between STAs, the data packet in a special format being generated by connecting or patching a plurality of data frames, the data packet in a standard format being generated from one data frame,~~ characterized in that

an STA supporting the special format comprises:

a unit transmitting a request packet before transmitting the data packet, the request packet being receivable only by the STA supporting the special format;

a unit managing a transmit-side STA as one supporting the special format when receiving said request packet, and transmitting to the transmit-side STA a reply packet which is receivable only by the STA supporting the special format;

a unit managing the transmit-side STA as one supporting the special format when receiving said reply packet; and

a unit transmitting the data packet in the special format when a receive-side STA supports the special format, and transmitting the data packet in a ~~the~~ standard format

generated from one data frame when it does not support the special format, based on management information in an own station.

17. (Currently Amended) The wireless packet communication apparatus according to claim 16, characterized in that:

the station ("STA") transmitting the data packet includes a unit setting format identification information in a control information field of a data packet to be transmitted, the format identification information at least indicating a distinction between the standard format and special format; and

the STA having received the data packet includes a unit selecting the standard format or special format according to contents of said format identification information included in the control information field in a received data packet, and subjecting the data packet to reception processing according to a definition of the selected format.

18. (Previously Presented) The wireless packet communication apparatus according to claim 16, characterized in that

the STA having received the data packet includes a unit identifying the transmit-side STA from a control information field in the received data packet, recognizing, according to the management information in the own station, a format which the transmit-side STA supports, and subjecting the data packet to reception processing according to a definition of the recognized format.

19. (Currently Amended) A wireless packet communication apparatus for generating a plurality of data packets in a special format in which a plurality of data frames are patched, and for transmitting the data packets simultaneously between stations ("STAs"), characterized by comprising:

a unit adding, to each of said plurality of data frames, a subheader including a field indicating a data size, a field indicating an order of a frame, and a field indicating presence/absence of a subsequent frame;

a unit generating one data block by connecting the data frames having the subheaders added thereto, and generating a number of data blocks by dividing the one data block so that the data blocks have a uniform packet time length, the number of data blocks corresponding to a number of simultaneous transmissions; and

a unit adding a main header to each of the number of data blocks corresponding to the number of simultaneous transmissions, and adding a control information field of the data packet before each of the data blocks having the main header added thereto and adding a frame check field of the data packet thereafter, to generate the data packets, the main header including information necessary to restore the patched data frames.

20. (Previously Presented) The wireless packet communication apparatus according to claim 19, characterized in that

said main header includes a class field indicating a structure of the main header according to numbers of data frames and fragments in the data packet, a frame number field indicating a number of frames in the data packet, a first frame starting position field

indicating a frame starting position in the data packet in unit of byte, and a fragment field indicating presence/absence of a fragment as a divided data frame and a position thereof.

21. (Previously Presented) The wireless packet communication apparatus according to claim 19, characterized in that

said main header includes a class field indicating a structure of the main header according to a number of data frames and fragments in the data packet, and a first frame starting position field indicating a frame starting position in the data packet in unit of byte.

22. (Previously Presented) The wireless packet communication apparatus according to claim 20 or claim 21, characterized in that

said main header is formed without the field(s) except for said class field when the numbers of data frames and fragments in the data packet are one.

23. (Previously Presented) The wireless packet communication apparatus according to claim 20, characterized by further comprising:

a unit checking the structure of the main header according to a value of the class field of the main header in each data packet received;

a unit recognizing the starting position of the subheader of the data frame according a value of the first frame starting position field of the main header in the data

packet, and cutting out a corresponding data frame from the data size of the subheader; and

a unit cutting out a corresponding data frame from the data size of the subheader when a data frame follows, and performing connecting processing with a fragment at a head of the subsequent data packet when a fragment follows, according to the values of the frame number field and the fragment field of the main header in the data packet, to restore the plurality of data frames in each data packet received.

24. (Previously Presented) The wireless packet communication apparatus according to claim 21, characterized by further comprising:

a unit checking the structure of the main header according to a value of the class field of the main header in each data packet received;

a unit recognizing the starting position of the subheader of the data frame according to the value of the first frame starting position field of the main header in the data packet, and cutting out a corresponding data frame from the data size of the subheader; and

a unit comparing the data size of the subheader following the cut-out data frame with a size of a portion subsequent to the subheader to distinguish whether it is a data frame or a fragment as a divided data frame, cutting out a corresponding data frame from the data size of the subheader when a data frame follows, and performing connecting processing with a fragment at a head of the subsequent data packet when a fragment follows, to restore the plurality of data frames in each data packet received.

25. (Previously Presented) The wireless packet communication apparatus according to claim 22, characterized by further comprising:

a unit checking the structure of the main header according to a value of the class field of the main header in each data packet received; and

a unit comparing the data size of the subheader with a size of a portion subsequent to a subheader to distinguish whether it is a data frame or a fragment as a divided data frame, when the numbers of data frames and fragments are one according to the structure of said class field, cutting out a corresponding data frame from the data size of the subheader when a data frame follows, and performing connecting processing with a fragment at a head of the subsequent data packet when a fragment follows, to restore the data frame in the received data packet.

26. (Currently Amended) A wireless packet communication apparatus for generating one or a plurality of data packet(s) in a special format in which a plurality of data frames are aggregated, and transmitting the data packet(s) between stations ("STAs"), characterized by comprising:

a unit adding subheaders to the data frames, the subheaders each including a field indicating a data size, a field indicating an order of a frame, and a field indicating presence/absence of a subsequent frame;

a unit generating a data block by aggregating the data frames having the subheader added thereto; and

a unit adding a main header to the data block, and adding a control information field of the data packet before the data block having the main header added thereto and

adding a frame check field of the data packet thereafter, to generate the data packet, the main header including information necessary to restore the aggregated data frames.

27. (Previously Presented) The wireless packet communication apparatus according to claim 26, characterized in that

said main header includes a class field indicating a structure of the main header according to a number of data frames in the data packet and to a frame number field indicating a number of frames in the data packet.

28. (Previously Presented) The wireless packet communication apparatus according to claim 27, characterized by further comprising

a unit forming the main header without the fields except for said class field when the number of data frames in the data packet is one.

29. (Previously Presented) The wireless packet communication apparatus according to claim 27, characterized by further comprising:

a unit checking the structure of the class field according to a value of the class field of the main header in each data packet received; and

a unit cutting out, for each of the data packets, corresponding data frames sequentially from the data sizes of the subheaders of the data frames, according to a value of the frame number field of the main header, to restore the data frames included in the received data packet.

30. (Previously Presented) The wireless packet communication apparatus according to claim 28, characterized by further comprising:

a unit checking the structure of the class field according to a value of the class field of the main header in each data packet received; and

a unit cutting out, for each of the data packets, corresponding data frames sequentially from the data size of the subheader of the data frame, to restore the data frame included in the received data packet.